Thomas settles in on Mir, welcomes Mir 25 crew mates

The seventh and final mission of an American astronaut to the Space Station Mir is well under way, as Astronaut Andy Thomas nears the end of his third week as a crew member, furthering a cooperative program designed to develop the knowledge and expertise needed to begin assembly of an International Space Station later this year.

Thomas officially became a member of the Mir 24 crew on Jan. 25. Since then, Thomas has been performing a variety of scientific experiments as he settles into his four-month stay on orbit.

Meanwhile, Commander Anatoly Solovyev and Flight Engineer Pavel Vinogradov have been busy handing over the reins of control of Mir operations to Mir 25 Commander Talgat Musabayev and Flight Engineer Nikolai Budarin, who arrived on the station on Jan. 31 along with French researcher Leopold Eyharts, who is representing the French space agency CNES.

On Feb. 19, Solovyev and Vinogradov will board their Soyuz TM-26 craft with Eyharts, undock from Mir and return to Earth to complete 198 days in space. The next day, Musabayev, Budarin and Thomas will climb into the Soyuz TM-27 craft which is docked to the Kvant-1 port, undock from Mir and fly around the station for a redocking at the transfer node port. That will free up the Kvant-1 port for the redocking of an unmanned Progress resupply vehicle on Feb. parking orbit since late last week.

Later this month, the oldest part of Mir, the Core Module, will pass 12 years on orbit.

In systems activities, the cosmonauts replaced the electronics unit on one of Mir's eleven operational gyrodynes. Spare parts for the gyrodyne were brought up on *Endeavour*. Before repairing the gyrodyne, the station had been operating normally on 10 gyrodynes, but having the additional gyrodyne available will reduce propellant consumption.

Thomas' research is focusing on 27 studies in the areas of Advanced Technology, Earth Sciences, Human Life Sciences, Microgravity Research, and International Space Station Risk Mitigation. The investigations are a combination of experiments performed on previous Mir missions as well as new research. One of the first experiments to be activated was an X-ray detector device. This investigation will gather information on the background cosmic radiation aboard the station.

Thomas, the seventh and final NASA astronaut to live and work aboard Mir, is scheduled to return to Earth in early June aboard the shuttle *Discovery* during STS-91.

Commander, pilot round out station assembly crew

Astronaut Brian Duffy will command STS-92, the third U.S. assembly flight to the International Space Station.

Duffy, an Air Force colonel, will be joined on the flight deck by Pilot Pamela Melroy. Melroy, an Air Force major and member of the 1994 Astronaut Class, marks her first space flight with STS-92. The flight will be Duffy's fourth space mission.

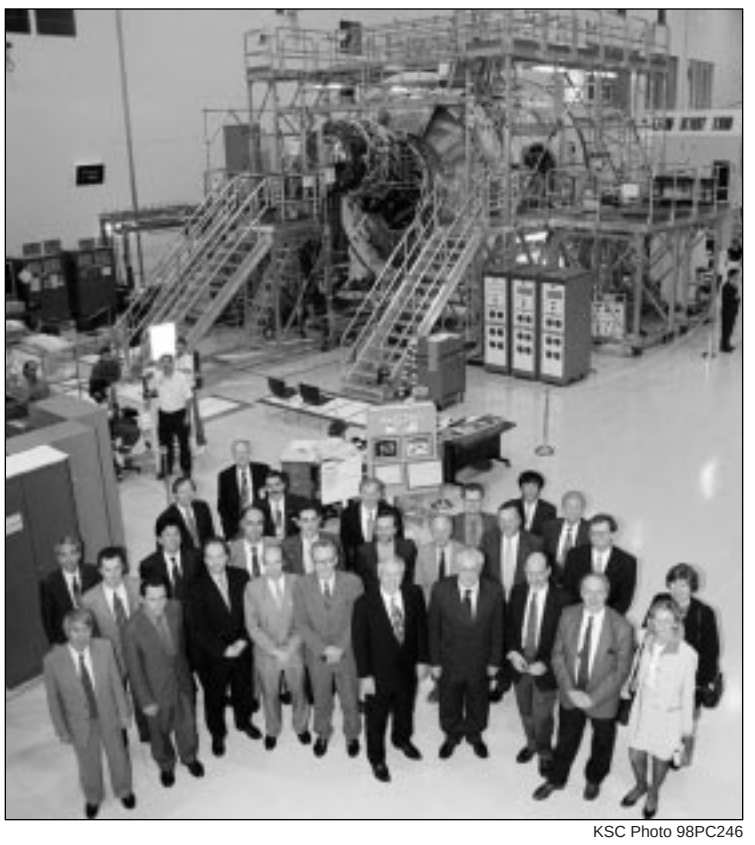

Duffy

Mission Specialists Koichi Wakata of NASDA, Jeff Wisoff, Ph.D.; Leroy Chiao, Ph.D.; Bill McArthur, Army colonel; and Michael Lopez-Alegria, Navy commander, were assigned in June.

Working in teams of two, Chiao, Wisoff, McArthur and Lopez-Alegria will conduct four space walks over the course of the mission, while Wakata has primary responsibility for operating the shuttle's Remote Manipulator System robot arm.

This fifth assembly flight will build on previous American and Russian assembly flights. STS-92 will be the third shuttle mission to the station.

"I couldn't be more pleased with the selection of Col. Duffy and the crew for STS-92. I have complete confidence in him and his fellow crew members, and look forward to working with them," said Randy Brinkley, station program manager.


KSC Photo 98PC246

SIGNING OF THE TIMES—Senior government officials from 15 countries participating in the International Space Station visit the American-built Node 1 at Kennedy Space Center's Space Station Processing Facility following a signing ceremony in Washington D.C. Partners from Russia, Japan, Canada, and European Space Agency, including Belgium, Denmark, France, Germany, Italy, the Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom signed the framework of cooperation. Front to back, left to right: Hidetoshi Murayama, Louis Laurent, Haakon Blankenborg, Joris Vos, Tom Vraalsen, NASA Administrator Daniel Goldin, Luigi Berlinguer, Antonio Rodota, Yvan Ylieff, Jacqueline Ylieff, Masaaki Komatsu, Serge Ivanets, Hiroshi Fujita, Akira Mizutani, Peter Grognard, Michelangelo Pipan, Gerhard Fulda, Jorg Feustel-Buechl, A. Yakovenko, JoAnn Morgan, Steve Francois, Roy Tharpe, Jon Cowart, John Schumacher, Didier Kechemair, Yoshinori Yoshimura and Loren Shriver.

Boeing to help place workers

Managers agree cuts won't hurt shuttle safety

NASA's space shuttle managers have reviewed the process that space flight operations contractor United Space Alliance will use to lower operating costs and have determined that safety will not be compromised.

NASA's Safety and Mission Assurance Risk Assessment team concurs with the process USA used to determine reductions in their work force. NASA asked USA to ensure that the flight rate for 1999 and beyond can be safely supported after the efficiencies are carried out.

Both NASA and USA understood that work force reductions would be part of the space flight operations contract to reduce costs. The space flight operations contract was awarded to USA at the beginning of 1996.

In an effort to assist employees affected by layoffs at USA, The Boeing Company reports that it has reviewed hiring plans at its space businesses. Based on new business and the level of normal employee attrition due to retirements, the company foresees 150-400 job openings in the Houston and Florida areas.

"With the new combination of Boeing and the former McDonnell Douglas and Rockwell businesses, Boeing currently has over 5,000 employees in the Florida and Houston areas," said John McLuckey, president of Boeing's Space Systems business unit. "These businesses support major programs such as Delta launch vehicles, the space shuttle and the International Space Station."

"Current forecasts show approximately 150 job openings on the Delta launch vehicle program," McLuckey added. This includes 100 openings in Florida (launch operations support and engineering), and 50 engineering openings in Houston.

In addition, past experience has shown that Boeing expects an annual turnover of 5 percent of the workforce due to normal attrition such as people leaving the company for retirement or taking new jobs with other companies. This translates into about 250 openings during the year in Houston and Florida.

"Over the past several months we have also increased our presence in Florida by adding over 200 employees for space station hardware testing and processing for launch," McLuckey added. "With planned space station launches scheduled over the next five years we expect our Florida operations employment to remain relatively stable."

While there are always uncertainties over what kinds of job openings become available due to attrition, and the timing of those openings, Boeing said it will try to match these openings to the affected USA workers, and will work closely with USA in its outplacement efforts.

To help accelerate the process, Boeing has set up a special electronic database to be able to accept applications and resumes over the Internet at: http://www.resjobs.com/boeing


S78-27136

Explorer 1 launches from the missile test center at Cape Canaveral, Fla., on Jan. 31, 1958.

NASA celebrates 40th anniversary of Explorer 1

Forty years ago Jan. 31, a team of scientists and engineers successfully launched Explorer 1, the first U.S. satellite to orbit the Earth. This historic accomplishment marked the nation's debut in the Cold War-era space race and set the stage for the establishment of the civilian space agency that would become NASA.

NASA's Jet Propulsion Laboratory was still operated as a research laboratory for the U.S. Army when it was selected in November 1957 to develop the first U.S. satellite, including its science package, communications system, and the high-speed upper stages for the Army's Redstone rocket that would guide Explorer 1 into the great unknown.

JPL and the Army completed the assignment and launched the satellite in less than three months. JPL and the Army Ballistic Missile Agency in Huntsville, Ala., joined in firing the 20-pound satellite from the missile test center at Cape Canaveral, Fla., on Jan. 31, 1958.

The scientific experiment onboard, a cosmic ray detector built by Dr. James Van Allen, University of Iowa, soon returned one of the most important findings of the space program: the discovery of what are now known as the Van Allen Radiation Belts around the Earth. Explorer 1 went on to operate for three months.

Following the Soviet Union's launch of Sputnik on Oct. 4, 1957, "there was a lot of pressure to get a satellite in orbit as quickly as possible," said Dr. William Pickering, then JPL's director.

The intensive effort was accomplished by a team of experts from U.S. academia and the military, along with top World War II German rocket scientists such as Dr. Wernher von Braun, who emigrated to the United States in the post-war years to help lead development of American rocket capabilities. A globally linked telecommunications system developed by JPL tracked Explorer 1 and received its scientific data. Amateur radio operators all over the world were invited to listen in on Explorer 1's communications.

Van Allen, still an active planetary and space physics researcher, observed that "there is no shortage of great ideas on what we'd like to do. 'Faster, better, cheaper' is NASA's mantra, and the recent successful launch of the Lunar Prospector spacecraft is the best example of that. But the Hubble Space Telescope is a good example of big projects that will continue to be conducted," he said. "There is virtually no limit to what can be investigated in interplanetary science and astronomy."

Endeavour crew praises ground support

Continued from Page 1

kind of unfortunate that you do not get more of the public credit. So this is the one opportunity that we have as a crew, STS-89, the crew of *Endeavour* to thank you for all the things that you have done to enable us to accomplish the mission that we went up there to do."

Payload Commander Bonnie Dunbar echoed that praise. "I'd like to thank all of the people who build the hardware that we put on these shuttles, who work with us, who train with us, who help execute the mission, and I encourage them to keep coming back because we intend to keep using this vehicle as a platform to test, to evaluate, to help assemble a space station and to evolve into the next generation of vehicle and put science and research technology permanently into low earth orbit."

Mission Specialist Mike Anderson gave special thanks to the workers in Palmdale, Calif., who overhauled *Endeavour* and installed the external airlock. "You know when you have a space shuttle that performs as well as ours did it's really easy. It really makes you look good."

With the monumental task of coordinating the transfer of almost 1,400 different items between Mir and *Endeavour*, Mission Specialist Jim Reilly said he enjoyed the mission.

"It was a wonderful coordination between the crews. The Russian and U.S. crews were absolutely outstanding as far as being able to work together," Reilly said.

The Russian crew member of STS-89, Salizhan Sharipov described the mission as "fantastic."

"I can't find any other words because no words to explain my feeling that I felt there. Of course, if I was going to Mars, I would want to go to the Mars with this crew, I think. I just fell in love with this group."

After four months on the Mir space station, Dave Wolf struggled for words to explain his experience.

"I also don't have the fitting words. It's so amazing. I see a lot of the colleagues and friends out here the best in the world. And I guess if this job were easy, we'd be out looking for new jobs. And this is not an easy job we're doing. And we've all worked real hard and it brings the team together, I guess that's what makes it so memorable."


JSC Photo S98-01431 by Steve Candler

Astronaut Dave Wolf is accompanied by JSC Director George Abbey from the runway to NASA Hangar 990 at Ellington Field for the traditional crew return ceremonies. Wolf had just returned from a 128-day stay in space, most of it aboard the Russian Mir Space Station, the day before.